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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,202	12/04/2000	Shigehiro Shimada	KOIK-T0215	2182

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EXAMINER

CASCHERA, ANTONIO A

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/673,202

Applicant(s)

SHIMADA ET AL.

Examiner

Antonio A Caschera

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in the pending application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (JP10-040395) in view of Matsugu et al. (U.S. Patent 6,453,069 B1).

In reference to claims 1 and 6, Kato discloses an object outline processing method where outlines of objects, including curved outlines, are extracted using curve data points of 2 reference frames to produce, the same curve data points in intermediate frames, onto a display (see paragraph 31, lines 14-18 of paragraph 30, "solution" section of abstract and Figure 6). Kato also discloses using certain curve data points of the outline of an object of reference frames F1 and Fn to create the object in intermediate frames so that certain curve data points, An and Nn, correspond in all the frames F1-Fn (see paragraphs 31-35 and Figures 5-7). Kato does not explicitly disclose determining analogousness between a first image portion including a correspondence point identified in the first frame and a second image portion including the

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correspondence point in the second frame by determining an absolute value sum of differences of respective pixel values within the first image portion and second image portion. Matsugu et al. discloses an image processing method for precisely and automatically detecting a specific image extraction region from an input image (see lines 1-3 of abstract). Matsugu et al. also discloses region matching processing of areas within a standard model image and a target image whereby a contour line is extracted based upon the absolute sum differences of RGB pixel values in the respective regions (see column 26-27, lines 56-23). Note, the office interprets the region matching processing of Matsugu et al. to perform equivalent processing as the, determining of analogousness of first and second image portions based upon absolute sum differences of applicant's claims. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the region matching processing of Matsugu et al. with the object outline processing techniques of Kato in order to provide a more accurate frame-by-frame outline detection scheme by stably, automatically and economically recognizing objects without being influenced by differences of the image size and/or position (see column 3, lines 10-15 of Matsugu et al.).

In reference to claims 3 and 8, Kato and Matsugu et al. disclose all of the claim limitations as applied to claims 1 and 6, respectively above, in addition, Kato discloses the start reference frame $F1$ and end reference frame being F_n (see lines 4-6 of paragraph 31). Kato also discloses using a DDA algorithm to interpolate curve data points, based on those points of reference frames $F1$ and F_n , between data midpoints $K1-K_n$ of an object in intermediate frame F_k (see paragraphs 35-36 and Figure 7).

In reference to claims 4 and 5, Kato and Matsugu et al. disclose all of the claim limitations as applied to claim 1 above, in addition, Kato discloses using certain curve data points of the outline of an object of reference frames F1 and Fn to create an object in intermediate frames so that certain curve data points, An and Nn, correspond in all the frames F1-Fn (see paragraphs 31-35 and Figures 5-7).

In reference to claims 9 and 10, Kato and Matsugu et al. disclose all of the claim limitations as applied to claim 6 above, in addition, Kato discloses using certain curve data points of the outline of an object of reference frames F1 and Fn to create an object in intermediate frames so that certain curve data points, An and Nn, correspond in all the frames F1-Fn (see paragraphs 31-35 and Figures 5-7).

In reference to claim 11, Kato discloses an auxiliary memory which stores various programs defining the data processing method (see paragraph 17 and #308 of Figure 1). Kato also discloses an object outline processing method where outlines of objects, including curved outlines, are extracted using curve data points of 2 reference frames to produce, the same curve data points in intermediate frames, onto a display (see paragraph 31, lines 14-18 of paragraph 30, "solution" section of abstract and Figure 6). Kato discloses using certain curve data points of the outline of an object of reference frames F1 and Fn to create the object in intermediate frames so that certain curve data points, An and Nn, correspond in all the frames F1-Fn (see paragraphs 31-35 and Figures 5-7). Kato does not explicitly disclose determining analogousness between a first image portion including a correspondence point identified in the first frame and a second image portion including the correspondence point in the second frame by determining an absolute value sum of differences of respective pixel values within the first image portion and second image

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portion. Matsugu et al. discloses an image processing method for precisely and automatically detecting a specific image extraction region from an input image (see lines 1-3 of abstract).

Matsugu et al. also discloses region matching processing of areas within a standard model image and a target image whereby a contour line is extracted based upon the absolute sum differences of RGB pixel values in the respective regions (see column 26-27, lines 56-23). Note, the office interprets the region matching processing of Matsugu et al. to perform equivalent processing as the, determining of analogousness of first and second image portions based upon absolute sum differences of applicant's claims. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the region matching processing of Matsugu et al. with the object outline processing techniques of Kato in order to provide a more accurate frame-by-frame outline detection scheme by stably, automatically and economically recognizing objects without being influenced by differences of the image size and/or position (see column 3, lines 10-15 of Matsugu et al.).

3. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (JP10-040395), Matsugu et al. (U.S. Patent 6,453,069 B1) and further in view of Ito et al. (U.S. Patent 5,966,141).

In reference to claims 12 and 13, Kato and Matsugu et al. disclose all of the claim limitations as applied to claims 3 and 8 respectively above. Although Kato discloses using certain curve data points of the outline of an object of reference frames F1 and Fn to create the object in intermediate frames so that certain curve data points, An and Nn, correspond in all the frames F1-Fn (see paragraphs 31-35 and Figures 5-7), neither Kato nor Matsugu et al. explicitly disclose determining a length of a round portion of the curve in the first frame and a length of a

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round portion of the curve in the third frame. Ito et al. discloses a system and method creating an animation of shapes whereby the contours of shapes are matched and corresponded to each other between different frames (see lines 1-4 of abstract). Ito et al. also discloses the system comprising a corresponding contour detector that determines corresponding contour pairs in adjacent key frames (see column 31, lines 48-50). Ito et al. discloses the key frames to be frames comprising a topological change to an object (see column 5, lines 38-40). Ito et al. discloses the contour detector calculating arc lengths of upper and lower contours of an object in each key frame, F0 and F1 (see column 32, lines 55-58 and column 33, lines 34-36). Ito et al. further discloses determining other paired points using interpolation, defined by the function $U(x)$, between the endpoints of the arc lengths (see column 33, lines 48-53 and #x0, x1 of Figure 38). Note, the office interprets the corresponding contour detection methods of Ito et al. to inherently disclose calculating a, "sampling interval" when performing interpolation as the interpolation function performs sampling within a certain range of points. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the contour correspondence determining techniques of Ito et al. with the region matching processing and the object outline processing techniques of Kato and Matsugu et al. in order to provide correctly shaped objects for automatically created intermediate frames generating these frames using relatively easy hardware and simple user operation (see column 2, lines 41-47 of Ito et al.).

Response to Arguments

4. Applicant's arguments, see pages 6-7 of Applicant's Remarks, filed 8/17/04, with respect to the 35 U.S.C. 103 rejection based upon Kato in view of Ogura, have been fully considered and

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are persuasive. Since the Applicant has shown that the subject matter of the reference (Ogura) and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person (See MPEP § 706.02(l)(1) and § 706.02(l)(2)), the 35 U.S.C. 103 rejection based upon Ogura has been withdrawn as Ogura no longer qualifies as prior art under 35 U.S.C. 103(a).

5. Applicant's arguments filed 8/17/2004, in view of the Matsugu reference, have been fully considered but they are not persuasive.

In reference to the Matsugu et al. reference and claims 1, 3-6 and 8-13 (see pages 8-9 of Applicant's Remarks), Applicant argues that the reference only, "attempts to find as close a match as possible between a standard image and a target image by comparing images," (see page 8, 1st paragraph of Applicant's Remarks) and therefore is unrelated to claims of the application at hand. The claims, in particular claims 1, 6 and 11, read that a picture image pursuit is performed, obtaining and identifying correspondence points on a curve in first and second frames. The office believes the "region matching" of Matsugu et al. to perform equivalent, "image pursuing" techniques as claimed by the applicant because as stated above, Matsugu et al. also discloses region matching processing of areas within a standard model image and a target image whereby a contour line is extracted based upon the absolute sum differences of RGB pixel values in the respective regions (see column 26-27, lines 56-23 of Matsugu et al.). Although the claims do cover generating curves in frames, the method of generating these curves in frames uses certain processing and methods as disclosed by Matsugu et al. and therefore, the office believes that the Matsugu et al. reference is directly related to the claims in the present application at hand. Also, the office interprets the matching of Matsugu et al. to perform exact

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matching as Matsugu et al. further indicates that image regions can be precisely extracted or recognized (see column 4, lines 15-18).

Further, the Applicant argues that one of ordinary skill in the art would not have been motivated to combine Matsugu's methods for finding matching images with Kato's method of extracting the outline of an image (see page 8, 2nd paragraph of Applicant's Remarks). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Kato discloses an object outline processing method where outlines of objects, including curved outlines, are extracted using curve data points of 2 reference frames to produce, the same curve data points in intermediate frames, onto a display (see paragraph 31, lines 14-18 of paragraph 30, "solution" section of abstract and Figure 6) and Matsugu et al. discloses an image processing method for precisely and automatically detecting a specific image extraction region from an input image (see lines 1-3 of abstract of Matsugu et al.). Both references are related to detecting/extracting image portions from multiple sources while the methods of Matsugu would help in improving the methods of Kato by improving the extraction and detection methods of Kato allowing for a more accurate frame-by-frame outline detection scheme by stably, automatically and economically recognizing objects without being influenced by differences of the image size and/or position and also compensating for any image

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characteristics which might further effect matching such as illumination, noise and the like (see column 3, lines 5-25 of Matsugu et al.). Therefore, since Matsugu discloses techniques to discard these influences while providing an accurate detection/extraction, the office interprets that one of ordinary skill in the art would have been motivated to combine these techniques with Kato to improve on the system Kato.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (703) 305-1391. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (703)-308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

aac

1/10/05



MATTHEW C. BELLA
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